

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for curing one or more parts, comprising:
determining, for each evaluator of a plurality of evaluators, a part corresponding curing predictive effectiveness;
wherein the step of determining includes obtaining a plurality of predetermined curing conditions, and curing at least one part at each of the predetermined curing conditions for obtaining an output from each evaluator for each predetermined curing condition;
wherein for each evaluator, E, of said evaluators, (E), said step of determining determines, for a plurality of curing conditions, the corresponding predictive effectiveness according to a correspondence correlation between (a1) and (a2) following:
 - (a1) outputs by the evaluator E, wherein for each curing condition, $[[()]]CC_j[[]]$, of the curing conditions, there is a portion of the outputs obtained when the evaluator E is provided with a corresponding activation input that includes a sequence of impedance responses from a device, the sequence of impedance responses being providing signals indicative of impedance measurements of the at least one part a rubber compound, (RC) being cured, wherein the rubber compound RC is being cured.
 - (i) — according to at its the curing condition CC_j ; and
 - (ii) — in curing equipment that is also to be used in curing the a subsequent part, and
 - (a2) for each curing condition, $[[()]]CC_k[[]]$, of the curing conditions, a known curing time of obtained from curing a rubber curable compound for at the curing condition CC_k , wherein the curable compound is expected to have a

composition corresponding to the at least one part cured at the curing condition CC_k;

providing, for each of a plurality of predetermined frequencies, an electrical current to the device, wherein the device outputs signals indicative of impedance measurements for ~~a rubber compound from which curing the subsequent part is being formed~~ in the curing equipment;

receiving, for each of said frequencies, an impedance data stream including a sequence of impedance responses from said device during the curing of the subsequent part;

for each of one or more of the curing evaluators, activating the evaluator for obtaining a corresponding result related to a prediction of a cure time of the subsequent part, when the evaluator is provided with a corresponding activation input from one of said impedance data streams;

using the corresponding results from the one or more evaluators for obtaining a predicted cure time for the subsequent part;

wherein a step of identifying is performed prior to said step of using, and said step of identifying identifies at least one of the evaluators, [[()]]E_i[[]]], for predicting a cure time for the subsequent part, wherein the corresponding predictive effectiveness for E_i is better than the corresponding predictive effectiveness of at least one other of the evaluators.

2. (Currently Amended) The method of Claim 1, wherein each of the curing conditions includes at least a curing temperature, and an identifier for identifying a particular batch from which a [[the]] rubber compound [[RC]] is obtained as the curable compound.

3. (Currently Amended) The method of Claim 1, wherein for each of the one or more evaluators, the corresponding activation input includes a predetermined segment of an entire impedance data stream indicative of the impedance measurements of ~~the rubber a curable~~ compound [[RC]] in response to a particular one of the frequencies ~~frequency~~ being input to the device.

4. (Currently Amended) The method of Claim 3 [[1]], wherein said particular frequency is approximately one of the predetermined frequencies.

5. (Previously Presented) The method of Claim 1, wherein the rubber compound includes a rubber polymeric compound.

6. (Previously Presented) The method of Claim 1, wherein said curing equipment includes at least one of: an injection molding equipment, a compression molding equipment, a transfer molding equipment, a belt press, and an autoclave.

7. (Previously Presented) The method of Claim 1, wherein the rubber compound includes at least one of: styrene-butadiene, polybutadiene, polyisoprene, ethylene-propylene, butyl, halobutyl, nitrile, polyacrylic, neoprene, hypalon, silicone, fluorcarbon elastomers, polyurethane elastomers, natural rubber and hydrogenated nitrile-butadiene rubber.

8. (Currently Amended) The method of Claim 1, wherein for each curing condition, [[()]]CC[[]]], of at least most of the curing conditions, the rubber a curable compound RC of (a1) for CC from which the at least one part is curing at the curing condition CC, and the rubber curable compound of (a2) for curing at CC are from a same rubber curable compound batch.

9. (Currently Amended) The method of Claim 1, wherein a rubber curable compound cured for creating the subsequent part substantially has each of its constituent ingredients in a range of some instance of the rubber curable compound that is cured to create the at least one part at RC corresponding with one of the curing conditions CC_j.

10. (Currently Amended) The method of Claim 1, wherein for each curing condition, each known the curing time is indicative of an elapsed time for curing a corresponding [[the]] rubber compound for curing condition CC_k to a predetermined elastic torque value.

11. (Currently Amended) The method of Claim 10, wherein each ~~known~~ curing time is indicative of an elapsed time for curing the corresponding rubber compound for curing condition ~~CE_k~~ to a percentage of a maximum elastic torque.

12. (Previously Presented) The method of Claim 1, wherein said determining step includes performing a statistical correlation between the outputs of (a1), and the curing times of (a2).

13. (Currently Amended) The method of Claim 1, wherein the ~~known~~ curing times of (a2) are determined using a rheometer.

14. (Previously Presented) The method of Claim 1, wherein at least one of the evaluators determines one of: (1) a maximum impedance value, (2) a time value for a maximum impedance, (3) a time value for a minimum impedance, (4) a value indicative of an area under a graph of a series of impedance values, (5) a slope obtained from a series of impedance values, (6) a dampening coefficient of a curve fitted to a series of impedance values, and (7) an amplitude coefficient of a curve fitted to a series of impedance values.

15. (Previously Presented) The method of Claim 14, wherein at least most of (1) through (7) are determined by the evaluators.

16. (Previously Presented) The method of Claim 1, wherein at least a majority of the plurality of predetermined frequencies are in a range of 10 hz to 5 Mhz.

17. (Previously Presented) The method of Claim 1, wherein the number of different frequencies of the plurality of predetermined frequencies can be greater than or equal to 4.

18. (Previously Presented) The method of Claim 1, wherein said device includes at least one of: a non-bridged dielectric or impedance measurement circuit, and a voltage divider circuit for determining the impedance responses of (a1).

19. (Currently Amended) The method of Claim 18, wherein said device determines the impedance responses of (a1) ~~substantially from~~ using an output from the non-bridged dielectric or impedance measurement circuit.

20. (Currently Amended) The method of Claim 18, wherein said device determines the impedance responses of (a1) ~~substantially from~~ using an output from the voltage divider circuit.

21. (Currently Amended) The method of Claim 1, wherein an electrode is operatively connected to the curing equipment and the device, wherein the impedance measurements for the subsequent part, and the impedance responses for the subsequent part are indicative of responses from a capacitor formed using the electrode and a ~~sample of the rubber curable compound from which the subsequent part is created~~.

22. (Previously Presented) The method of Claim 1, further including a step of dividing at least one of the impedance data streams into a plurality of segments.

23. (Currently Amended) The method of Claim 22 [[1]], wherein for at least one of the evaluators, its corresponding activation input is one of the segments.

24. (Previously Presented) The method of Claim 1, wherein said step of using includes combining the corresponding results from at least two evaluators.

25. (Previously Presented) The method of Claim 24, wherein said combining step includes providing the corresponding results from the at least two evaluators to a predetermined multiple regression equation.

Please cancel Claim 26.

27. (Previously Presented) The method of Claim 1, further including the step of: selecting the outputs of (a1) for each of a subset of the evaluators and their corresponding activation inputs; combining the selected outputs in each of a plurality of combinations; and determining at least one of the combinations having a predictive effectiveness that is better than the predictive effectiveness of at least one of the evaluators.

28. (Previously Presented) The method of Claim 27, wherein said selecting step includes choosing for the outputs of (a1) that are correlate better with the known curing times of (a2) than the outputs of (a1) that are not chosen.

29. (Previously Presented) The method of Claim 27, wherein said combining step includes:

obtaining a value indicative of a maximum number of the outputs to be provided in each of the combinations.

30. (Currently Amended) The method of Claim 27, wherein said step of determining at least one of the combinations includes performing a multiple regression of at least some of the combinations against the known curing times of (a2).

31. (New) A method for curing one or more parts, comprising:

obtaining, for each of a plurality predetermined curing conditions, a corresponding curing time for curing a corresponding curable material;

determining, for each evaluator of a plurality of evaluators, a corresponding curing predictive effectiveness;

wherein the step of determining includes, for each of the predetermined curing conditions, curing at least one part at the predetermined curing condition for obtaining an evaluator output from each evaluator when the evaluator is provided with data indicative of corresponding impedance responses from the curing of the part at the predetermined curing condition;

wherein for each evaluator, E, of said evaluators, said step of determining determines the corresponding predictive effectiveness according to a correspondence between (a1) and (a2) following:

- (a1) the evaluator outputs by the evaluator E, and
- (a2) the curing times;

preferring one or more of the evaluators over another of the evaluators using their respective corresponding curing predictive effectiveness;

for each of the preferred one or more evaluators, activating the evaluator for obtaining a result related to a prediction of a cure time of a subsequent part, when the evaluator is provided with data indicative of corresponding impedance responses from the curing of the subsequent part;

wherein a step of identifying is performed prior to said step of using, and said step of identifying identifies at least one of the evaluators (E_1) for predicting a cure time for the part, wherein the predictive effectiveness for E_1 is better than the predictive effectiveness of at least one other of the evaluators.

32. (New) The method of Claim 31, wherein the step of preferring includes determining a corresponding weighting for each of the one or more evaluators.